UCHIDA

UCHIDA BC-10
BUSINESS CARD CUTTER

SERVICE MANUAL

UCHIDA YOKO CO., LTD.

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Please follow safety instructions on labels attached on the machine when you do service. Be sure to turn off the Power Switch and remove the plug before touching the internal parts of the machine.

1. EXPLANATION OF SYMBOLS

You will find following symbols in this Manual and on labels attached onto the machine.

⚠ **WARNING**, which identifies a potentially hazardous situation which, if not avoided, could result in death or injury.

⚠ **CAUTION**, which identifies a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage incidents.

Prohibited	Do not disassemble	Do not touch with wet hands
Do not expose to wet conditions	Unplug	Need to ground
General instruction	Risk of electric shock	

2. SAFETY INSTRUCTIONS

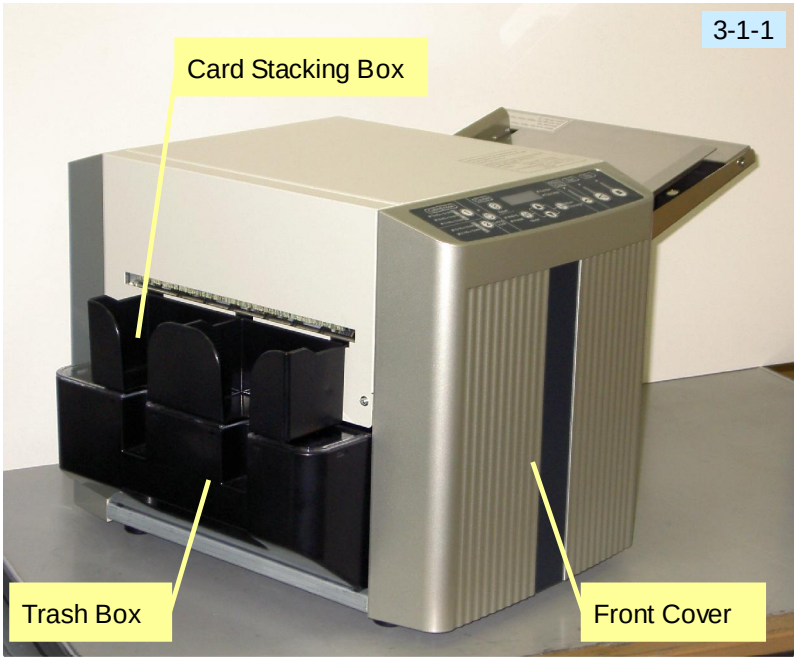
⚠ WARNING	
	Connect the power cord directly into a wall-mounted outlet of appropriate voltage. To avoid the risk of fires or electric shock, do not connect to a multiple outlet strip.
	Do not plug into an outlet of a voltage that is different from the one marked on the serial tag. Operating on an incorrect voltage can cause fires or electric shock.
	Do not connect or disconnect the power cord with wet hands in order to avoid electric shock or fires.
	To avoid the risk of fires or electric shock, do not abuse the power cord. Do not j put excessive weight on the cord, k pull without holding the plug, l bend excessively, or m modify the cord.
	If a sheet is stuck in the Cutter Unit, j clear the error, k press the start button to open the cutter, and l turn off the Power Switch before removing the paper.
	Do not remove the transparent cover of the trash box. It is part of the safety cover of the Slitter Unit, which keeps operator's hands from being injured while the Card Stacking Box has been removed.
	Do not expose the BC-10 to rain or wet conditions in order to avoid fires or electric shock.
	If you notice a strange sound or smell while the BC-10 is running, turn off the Power Switch immediately and remove the plug. Call your supplier for repair.

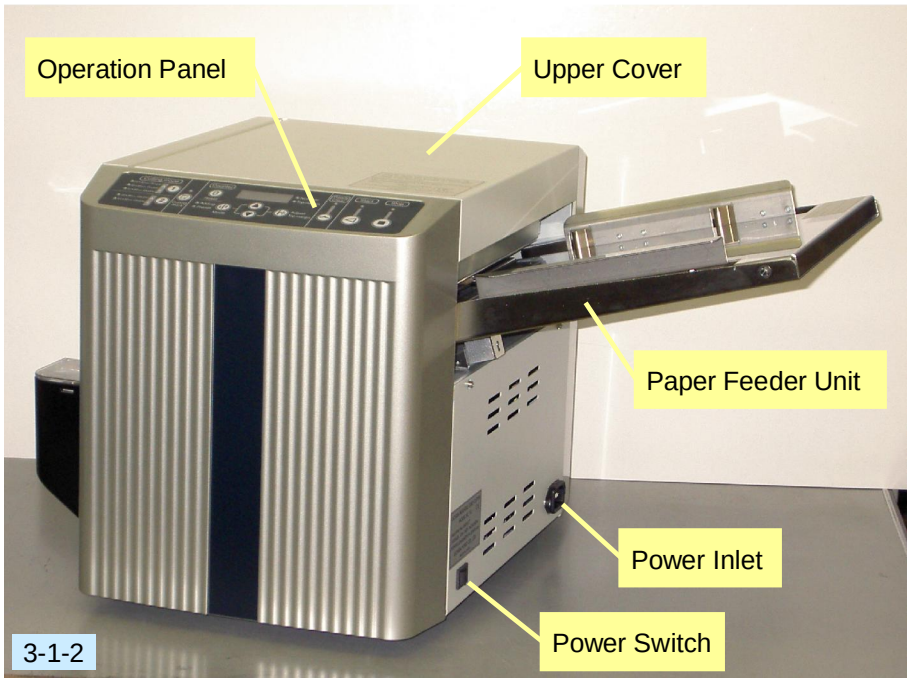
⚠ CAUTION	
	Do not connect the power cord to an outlet when the plug is dusty. Make sure the plug fits completely into the outlet.
	Do not use a power cord that is not attached to the BC-10.
	Do not use the attached power cord for other use.
	To avoid the risk of fires or electric shock, do not operate the BC-10 without grounding. If a three-hole outlet is not available, be sure to ground the power cord with the adapter.
	Do not disassemble the Cutter Unit.
	Do not disassemble the Slitter Unit.
	Be sure to turn off the Power Switch before removing jammed paper.
	When you move the BC-10, lift from the bottom. The BC-10 weighs about 46 lbs. (21.0kg).
	Do not rub the edges of paper in order to avoid the risk of injury.

⚠ CAUTION	
	Do not use the BC-10 in dusty or damp conditions in order to avoid the risk of fires or electric shock.
	Do not put the BC-10 in an unstable place in order to avoid the risk of falling down.
	Remove the plug from the outlet if the BC-10 will not be in use for a long period.
	Never use the cord to pull the plug from an outlet.
	Clean up the blades of the plug periodically. Dust on the blades can cause fires.
	Turn off the Power Switch and disconnect the plug before moving the BC-10.

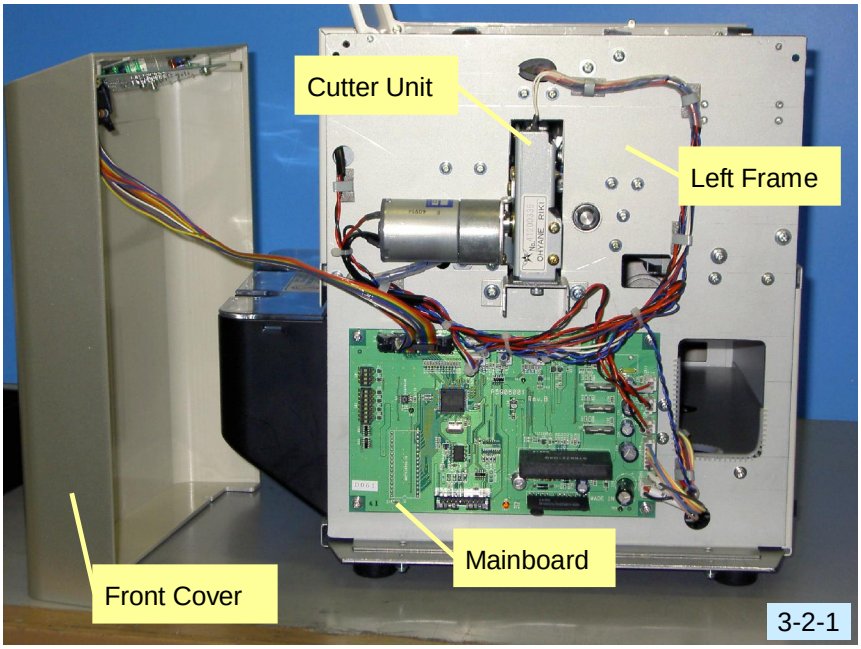
3. DEFINITION OF THE PARTS

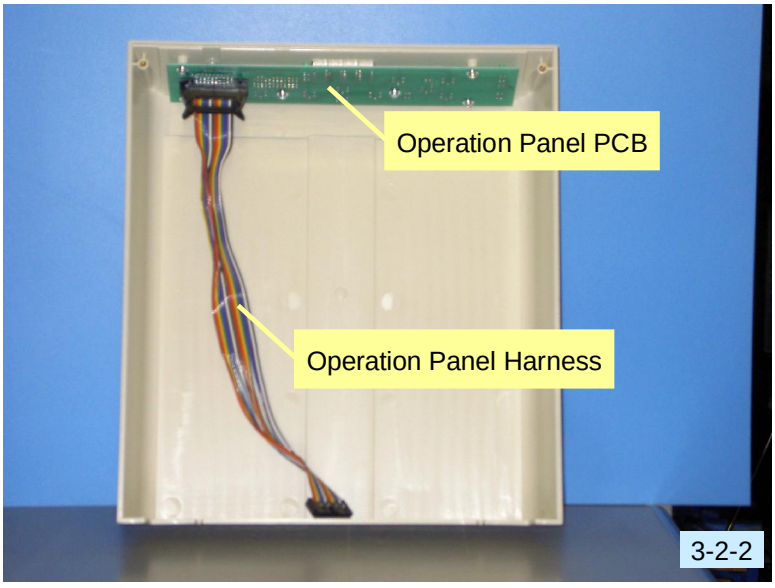
3-1. Overview



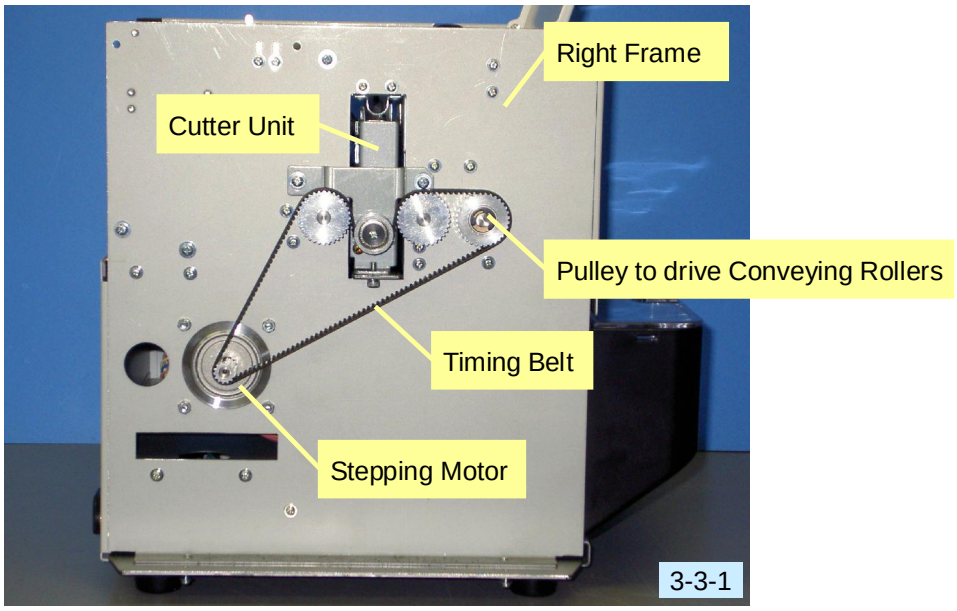


3-2. Behind the Front Cover

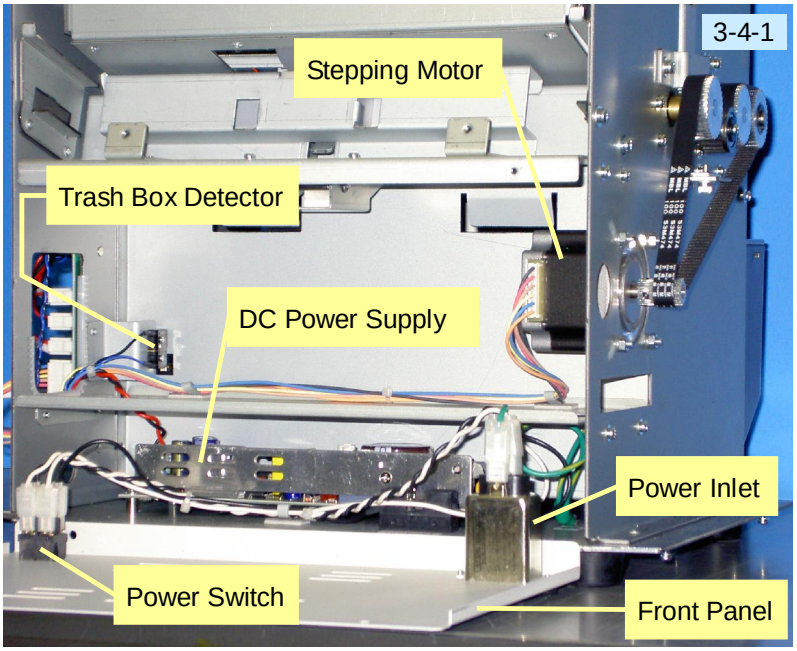




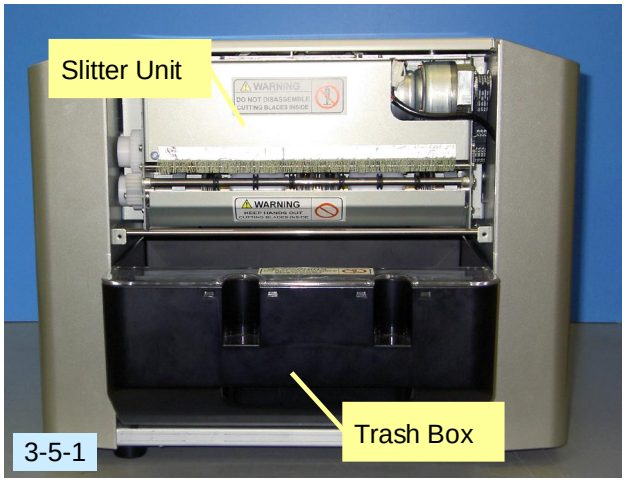
3-3. Behind the Rear Cover



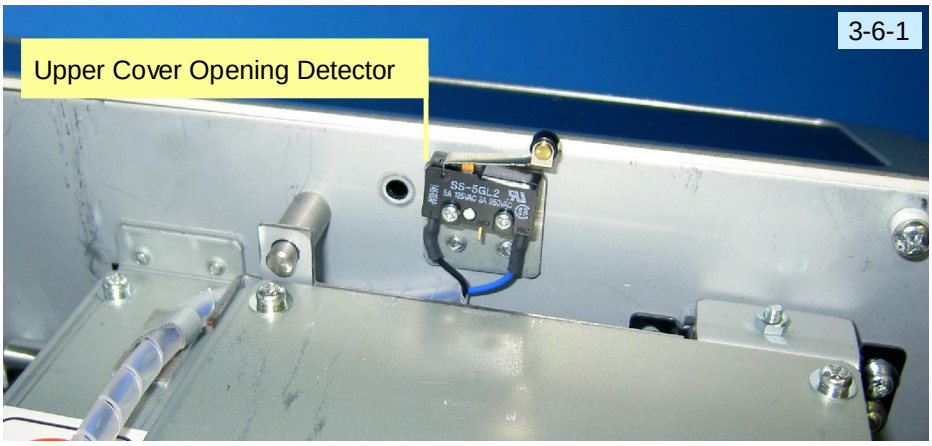
3-4. Behind the Front Panel

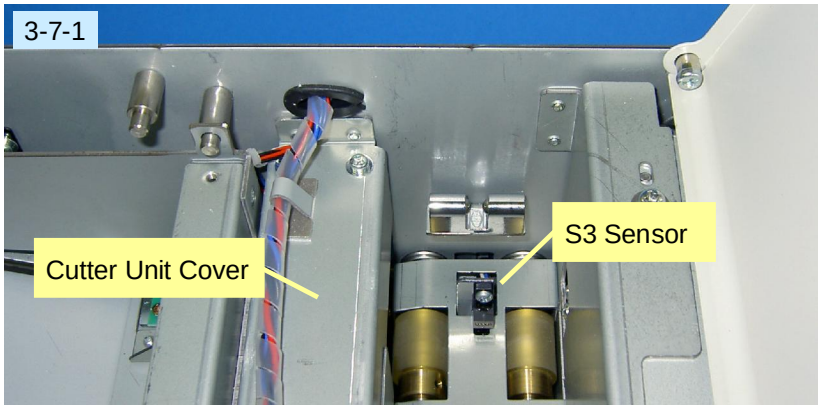


3-5. Behind the Rear Panel



3-6. Under the Upper Cover





4. HOW TO DETACH THE COVERS

> ⚠ **WARNING:** Be sure to turn the power off before removing any panel or cover.

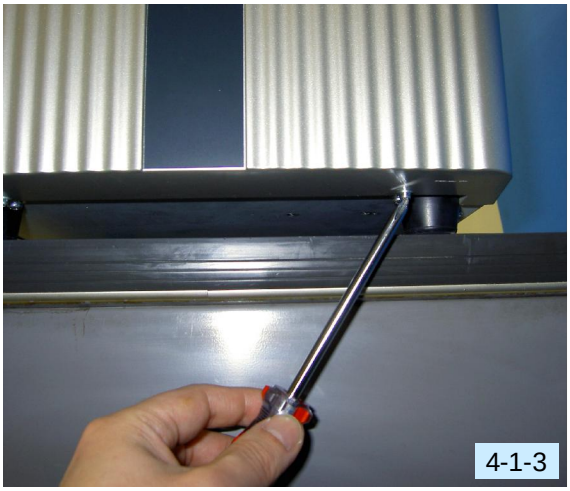
4-1. To remove the Front Cover:

1. Turn off the Power Switch.
2. Move the machine to the verge of the desk (4-1-2).

4-1-1

4-1-2

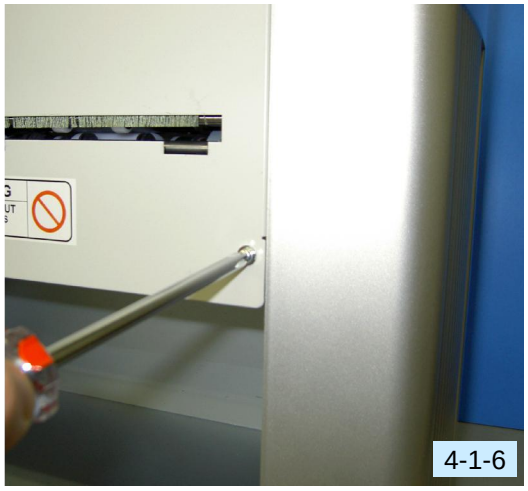
3. Loosen the two M3 Setscrews under the Front Cover (4-1-3).
4. Open the Upper Cover and remove the M3 Setscrew (4-1-4).


4-1-3

4-1-4

5. Remove the two M3 Setscrews from the Rear Panel.

4-1-5


4-1-6

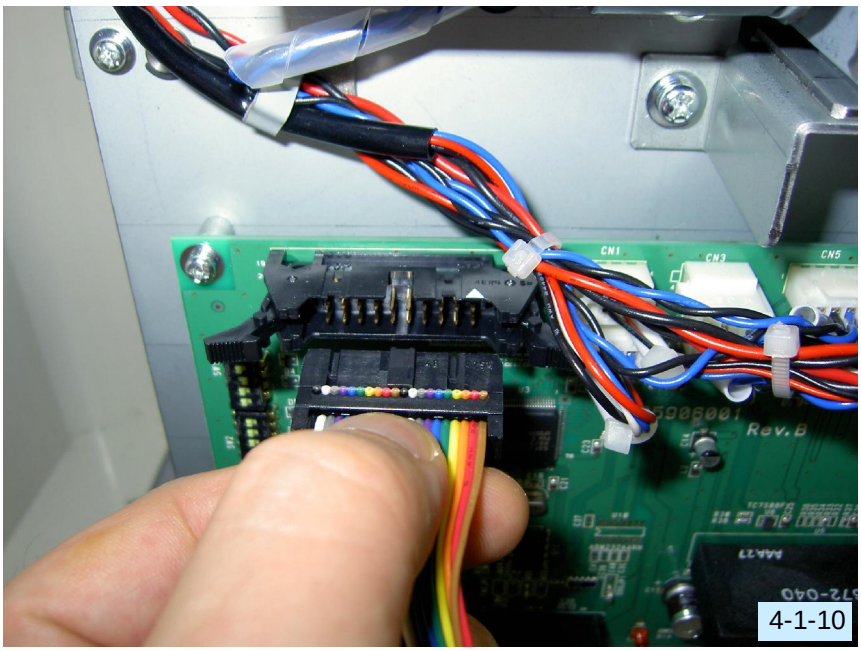
6. Take off the Rear Panel.
7. Remove the M3 Setscrew (4-1-8).

4-1-7

4-1-8

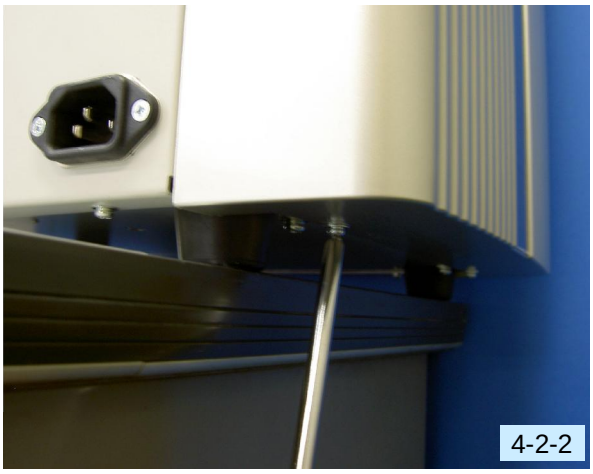
8. Take off the Front Cover.

9. Pull out the Operation Panel harness from the Mainboard.



4-2. To remove the Rear Cover:

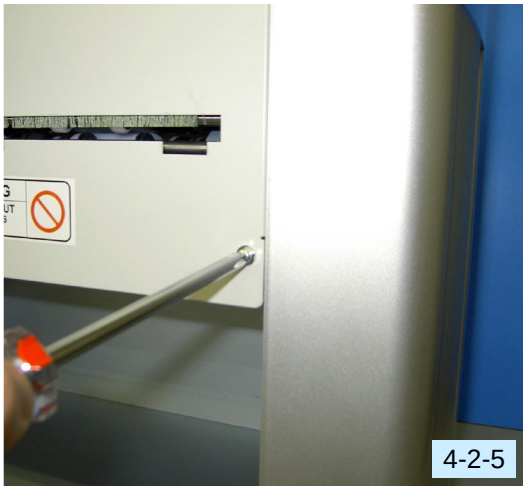
1. Turn off the Power Switch.
2. Move the machine to the verge of the desk.
3. Loosen the M3 Setscrews under the Rear Cover.



4. Open the Upper Cover.
5. Remove the M3 Setscrew.

6. Remove the two M3 Setscrews from the Rear Panel.

4-2-4

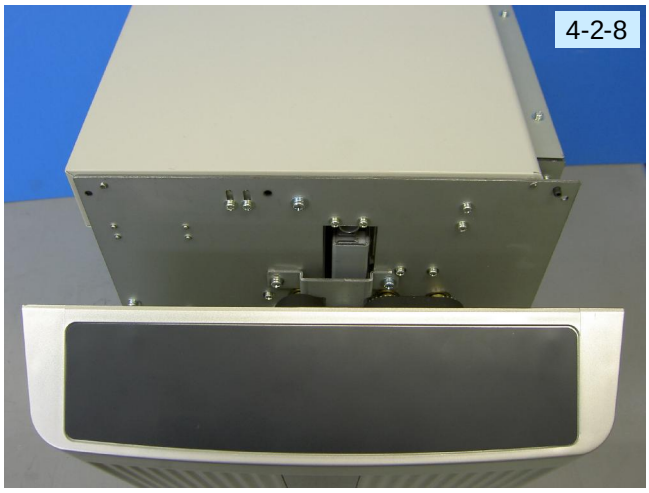

4-2-5

7. Take off the Rear Panel.
8. Remove the M3 Setscrew (4-2-7).

4-2-6

4-2-7

9. Take off the Rear Cover. There is no harness behind the Rear Cover.



4-3. To take off the Front Panel:

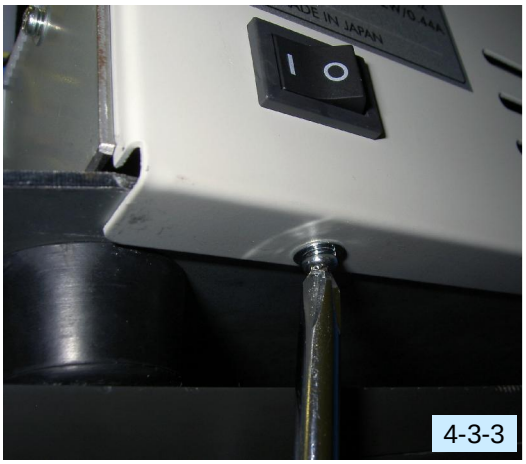
> ⚠ **WARNING:** Be sure to pull out the Power Cord before removing the Front Panel in order to avoid the risk of electric shock.

1. Turn off the Power Switch.
2. Pull out the Power Cord from the Power Inlet. There is a DC Power Supply behind the Front Panel.

4-3-1

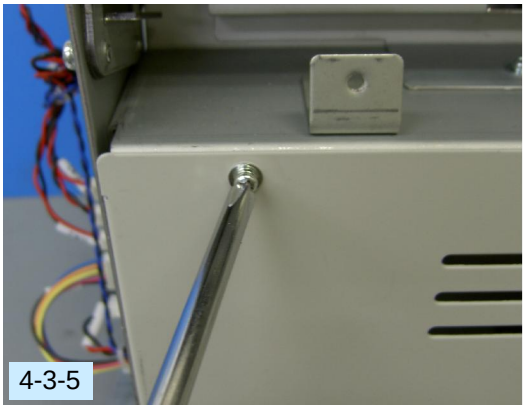
4-3-2

3. Move the machine to the verge of the desk.
4. Remove the two M3 Setscrews under the Front Panel.


4-3-3

4-3-4

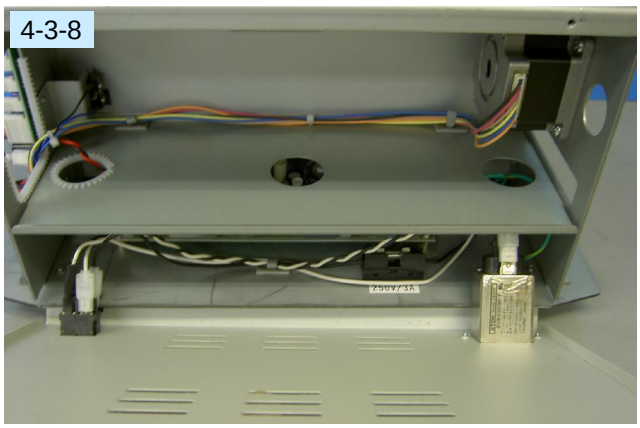
5. Remove the two M3 Setscrews in the upper part of the Panel.


4-3-5

4-3-6

6. Take off the Front Panel. Behind the Panel, there are harnesses connected to the Power Inlet and Power Switch.

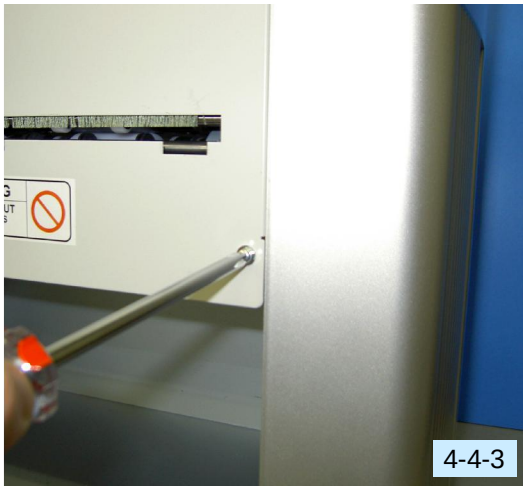
4-3-7


4-3-8

4-4. To take off the Rear Panel:

1. Turn off the Power Switch.

2. Remove the two M3 Setscrews from the Rear Panel.



3. Take off the Rear Panel.

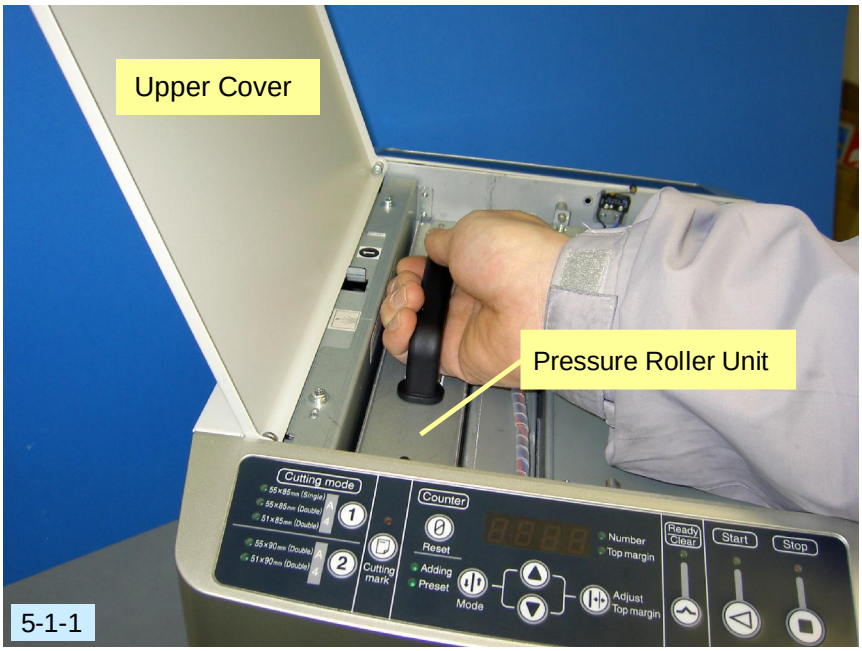
5. MAIN PARTS

5-1. Pressure Roller Unit

To remove the Pressure Roller Unit:

1. Open the Upper Cover.

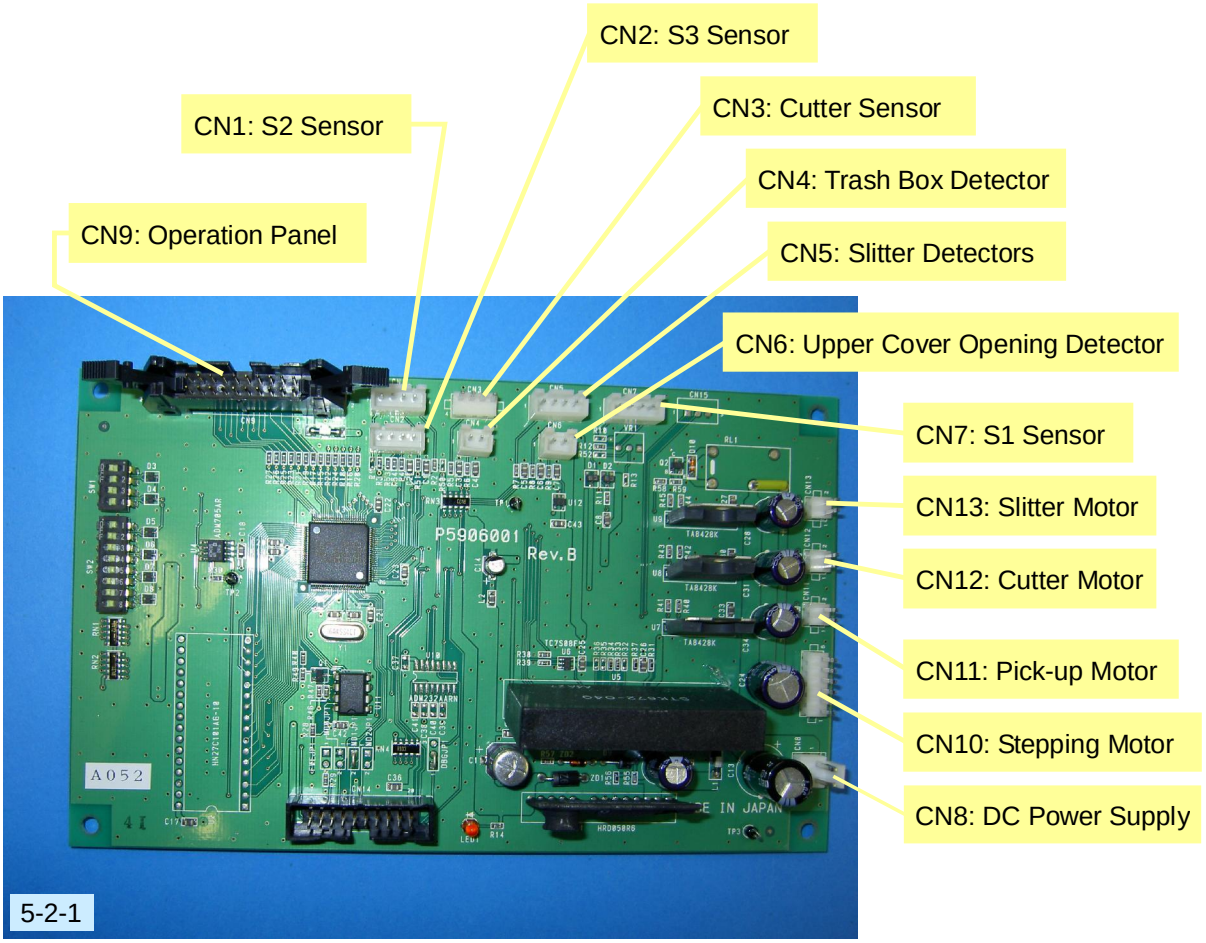
2. Lift the handle.



5-1-1

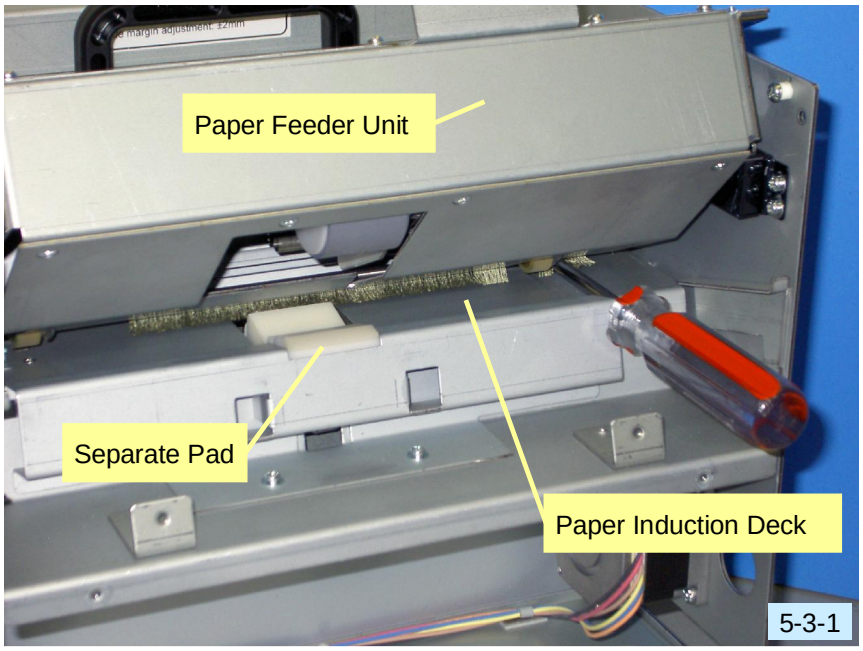
5-1-2

5-2. I/O Ports on the Mainboard



5-3. Separate Pad

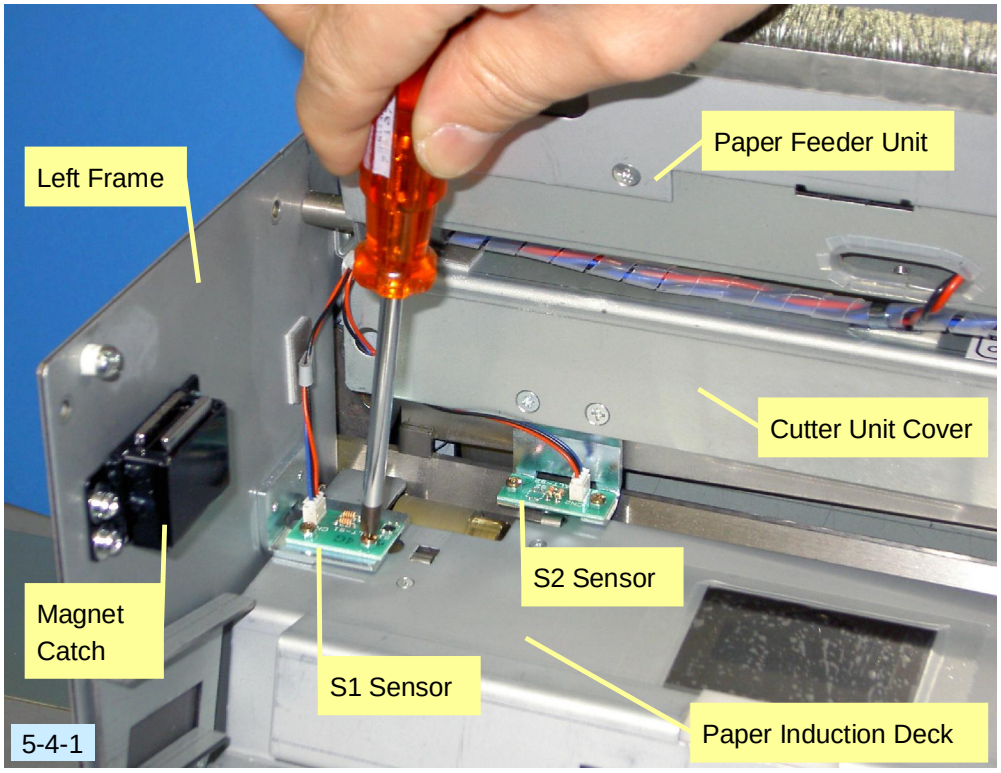
The Paper Feeder Unit can be swung only 30° for safety's sake. When you replace the pad, insert a screwdriver between the Paper Feeder Unit and Paper Induction Deck to keep the Paper Feeder Unit open.

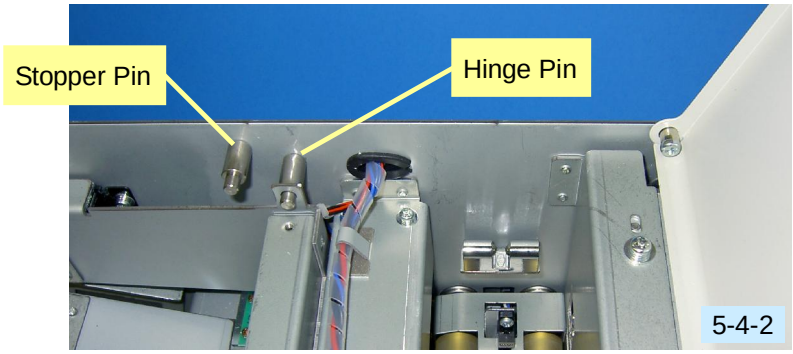


5-4. S1 Sensor and S2 Sensor

To replace the S1 or S2 sensor:

1. Remove the Stopper Pin located next to the Hinge Pin on the left frame so that you can swing up the Paper Feeder Unit wider than 30°.
2. Remove the M2 Setscrews and pick up the sensor.
3. Disconnect the cable.
4. Connect the cable to the new sensor.
5. Set the Sensor in the proper position.
6. Tighten the Setscrews. The standard clearance between the Sensor Bracket and the Paper Induction Deck is 0.6mm
7. Be sure to put the Stopper Pin back to its regular position.

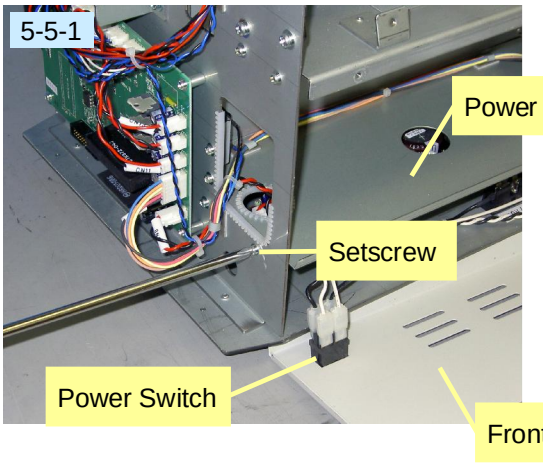


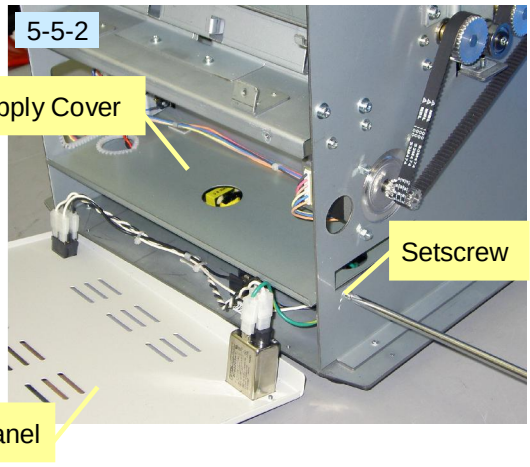


5-5. DC Power Supply

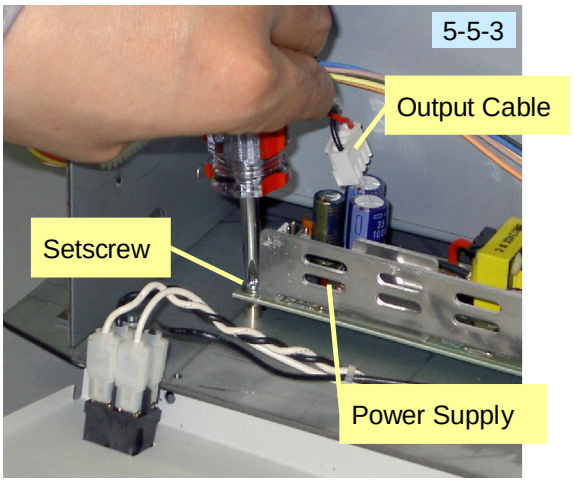
To remove the DC Power Supply:

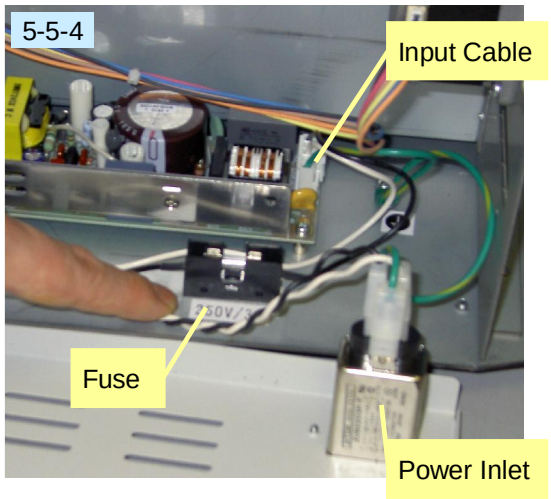
1. Take off the Front Panel (See **4-3**).
2. Remove the Setscrews on both frames.
3. Take off the Power Supply Cover.





4. Disconnect the Input and Output Cable from the DC Power Supply.
5. Remove the M3 Setscrews and pick up the DC Power Supply.

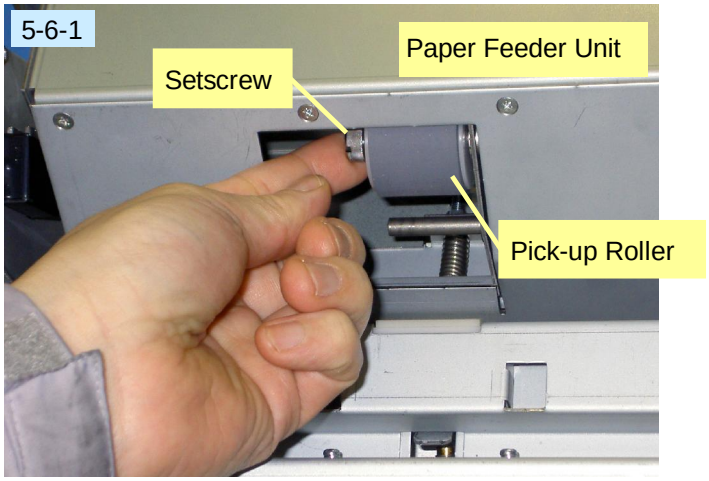




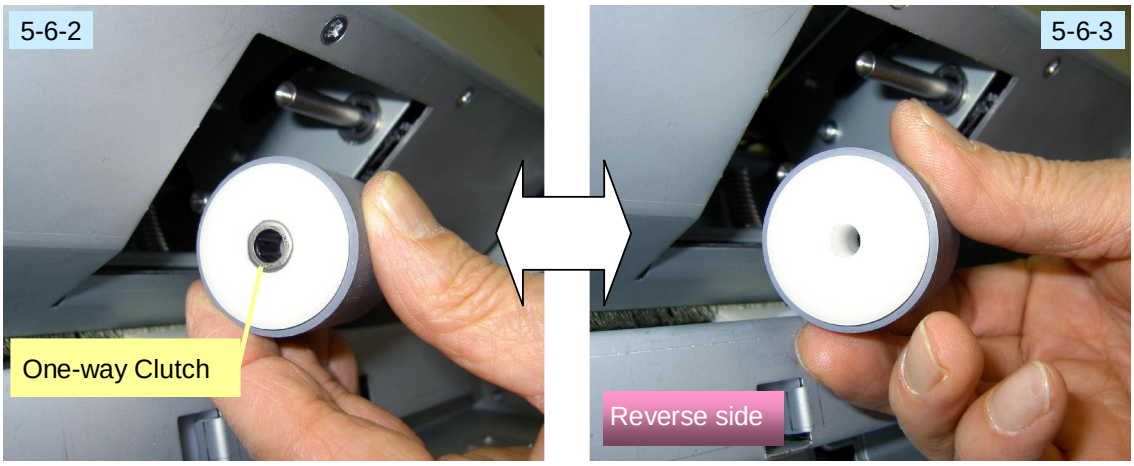
5-6. Pick-up Roller

To replace the Pick-up Roller:

1. Swing up the Paper Feeder Unit.
2. Keep the Paper Feeder Unit open with a screwdriver (See **5-3**).
3. Remove the Setscrew and pull out the Roller.



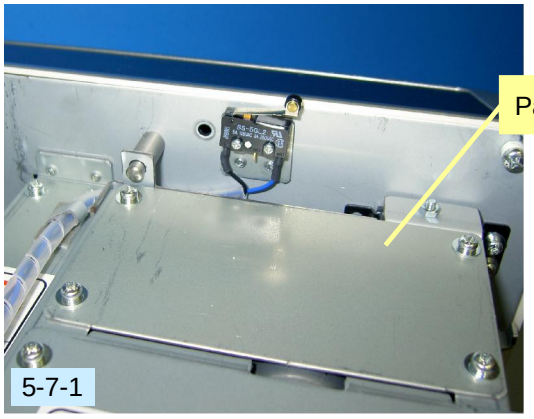
4. Put a new Roller on the shaft. The Roller has a one-way clutch, so that it does not rotate in the wrong direction. Make sure the clutch side faces the Setscrew (5-6-2).
5. Tighten the Setscrew.



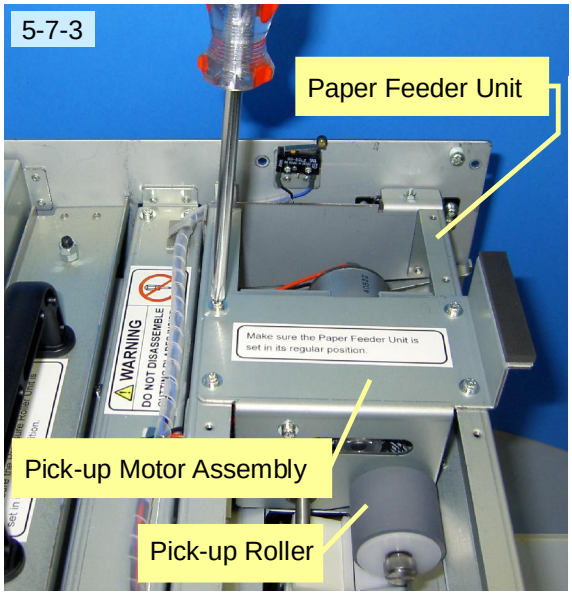
5-7. Pick-up Motor

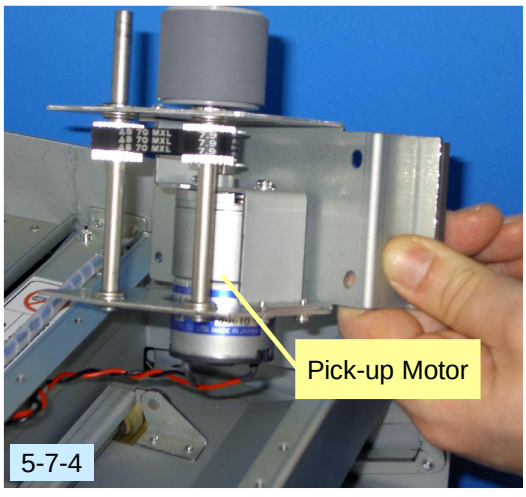
To remove the Pick-up Motor:

1. Remove the two panels on the Paper Feeder Unit.



2. Remove the Setscrews and lift the Pick-up Motor assembly.

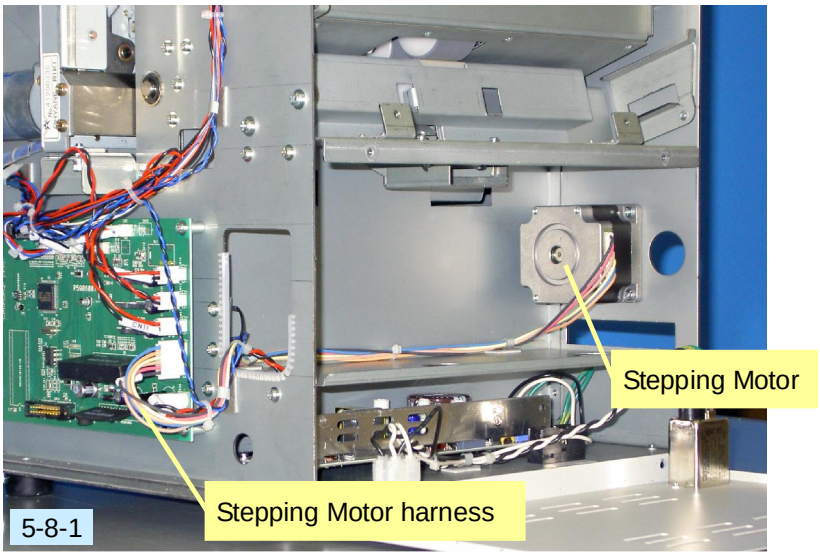


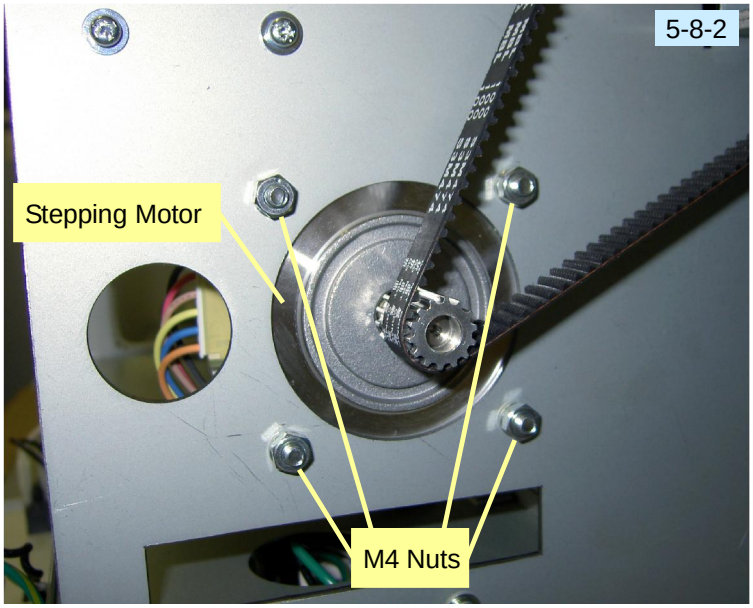


5-8. Stepping Motor

To remove the Stepping Motor:

1. Disconnect the harness from the Main Board.
2. Remove the M4 Nuts. Take care not to drop the motor.





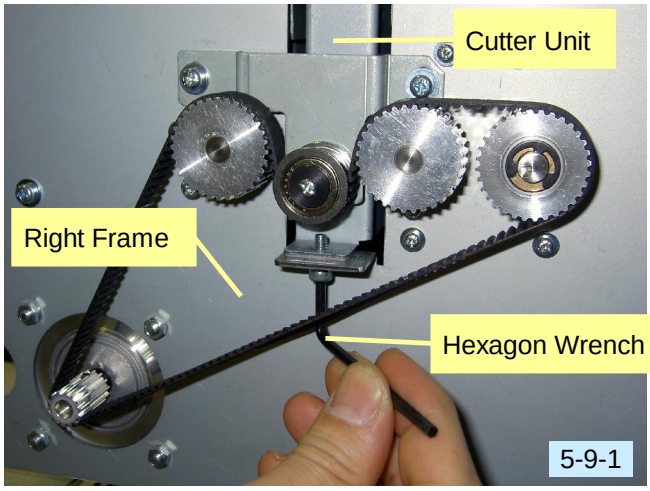
5-9. Cutter Unit

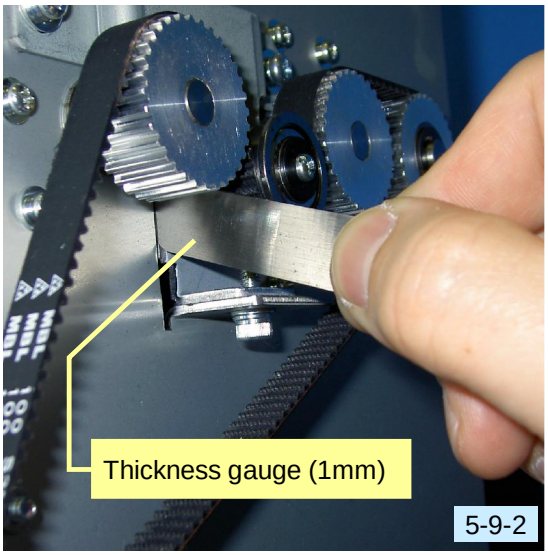
To remove the Cutter Unit:

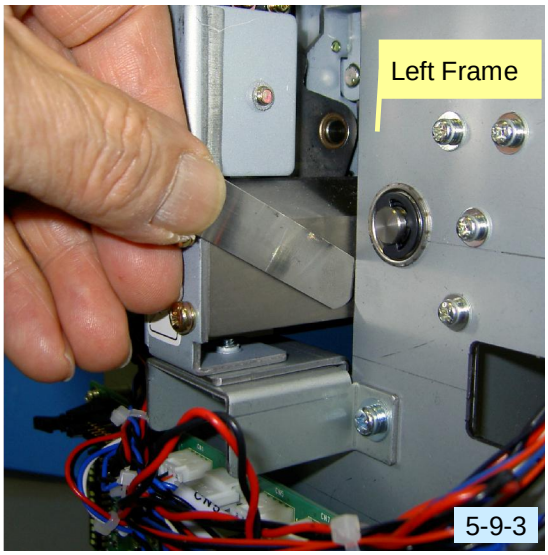
1. Pull out the Cutter Motor harness (CN12) and Cutter Sensor harness (CN3) from the Mainboard (See **5-2**).
2. Remove the Setscrews with a hexagon wrench (5-9-1).

To set the Cutter Unit:

1. Place the Unit in the proper position.
2. Fix it with the Setscrews. Make a gap of 1.0mm between the fixed blade of the Cutter Unit and the verge of the frame openings (5-9-2, 5-9-3).
3. Adjust the Top Margin after the setup is finished.



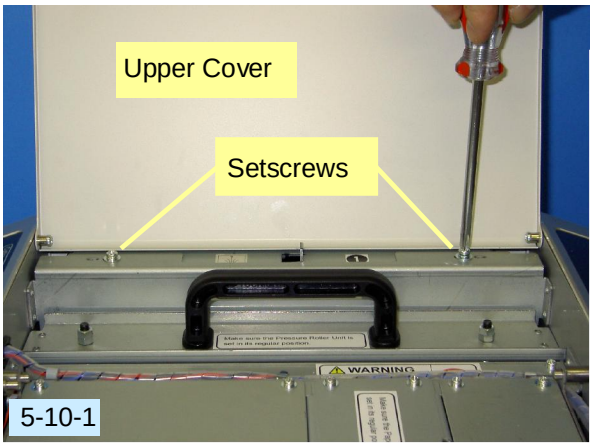


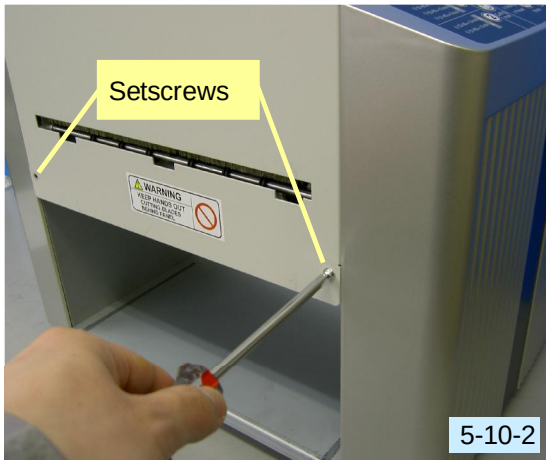


5-10. Slitter Unit

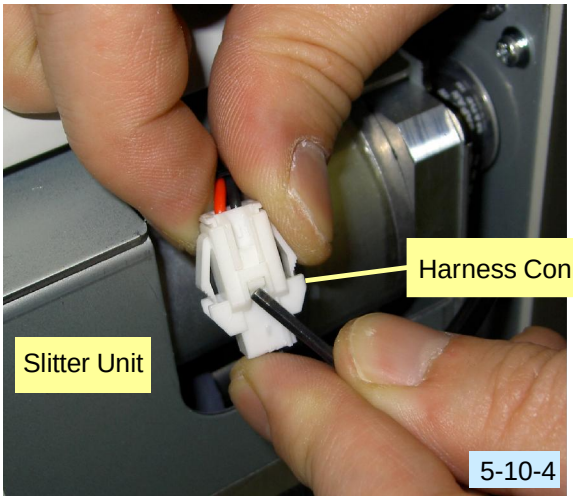
To remove the Slitter Unit:

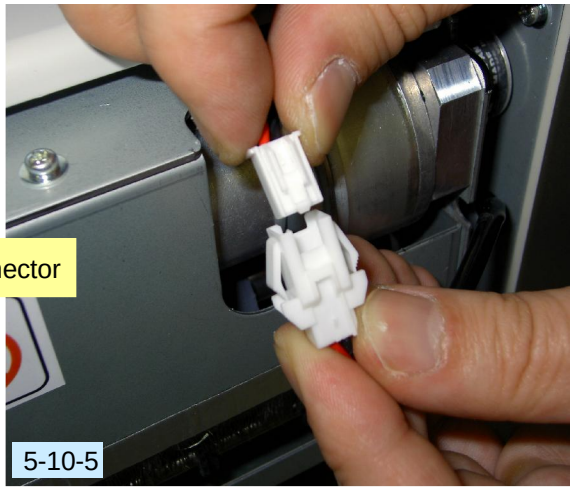
1. Open the Upper Cover.
2. Remove the M4 Setscrews from the Slitter Unit.
3. Remove the M3 Setscrews from the Rear Panel and take off the Panel from the machine.





4. Pull out the Slitter Motor harness from the Connector.





5. Hold the both sides of the Slitter Unit and swing up to remove it.

6. TROUBLESHOOTING

Troubles	Possible Cause	Action
1. The Display and LEDs do not light up when you turn on the Power Switch.*	The Power Cord is not properly connected to an outlet and the Power Inlet.	Connect the Power Cord properly to an outlet and the Power Inlet.
	The Outlet is dead.	Make sure the outlet is alive.
	An excessive electromagnetic wave or static electricity is affecting the machine.	Turn the power off and move the machine away from the possible source. Turn the power back on after seven seconds.
2. The BC-10 does not work when you press the Start button.*	There is an error code in the Display.	Clear the error and restart.
	The "Preset" number is set to "0" with the "Preset" mode being on.	For a test cutting, select "10" as the "Preset" number and try cutting again. Refer to 6.8.
3. The BC-10 does not start feeding sheets when you press the Start button.*	The sheets are too thick.	Try thinner sheets (under 0.01" or 0.25mm).
	The lead edge of the sheets curls too much.	Straighten the lead edge of the sheets.
	There is some silicone oil on the sheets.	Replace the sheets.
	The friction of the paper is too much.	Try some other paper with less friction.
	The Pick-up Roller has worn out to lose its grip.	Replace the Pick-up Roller.
	The Separate Pad is worn out.	Replace the Separate Pad.
4. A sheet stops after moving slightly.	The sensor cannot detect because the paper is irregular (highly transparent or too dark).	Use proper papers.

Troubles	Possible Cause	Action
	You are trying to cut sheets without a Cutting Mark while the Cutting Mark function is on.	Turn off the Cutting Mark function or use the sheets with a Cutting Mark.
	The Cutting Mark is printed with a dye-based inkjet printer, so that the Sensor cannot detect the Mark.	Trace the Cutting Mark with a dark-colored pencil or marker or print with a laser printer or pigment-based inkjet.
	Since the Paper Feeder Tray is skewed, the sensor cannot detect a sheet.	Reset the Paper Feeder Tray properly.
5. Two or more sheets are fed at one time.	The humidity of the atmosphere is so low as to cause electrostatic problems.	Operate the BC-10 under proper conditions. Keep the humidity between 50 and 80%.
	The sheets get stuck together because of static electricity.	Fan the stack of sheets and reload.
	The BC-10 is not grounded.	Make sure the machine is grounded.
	The Separate Pad is worn out.	Replace the Separate Pad.
6. The BC-10 stops in the middle of cutting and “E002” appears in the Display (repeatedly).	The Cutter blades have got damaged and got partly dull because something hard such as a clip or a staple was cut.	Replace the Cutter Unit.
7. The cut edges are not crisp.	The Cutter blades have worn out. (When the long sides of finished cards are not crisp.)	Replace the Cutter Unit.
	The Slitter discs have worn out. (When the short sides of finished cards are not crisp.)	Replace the Slitter Unit.

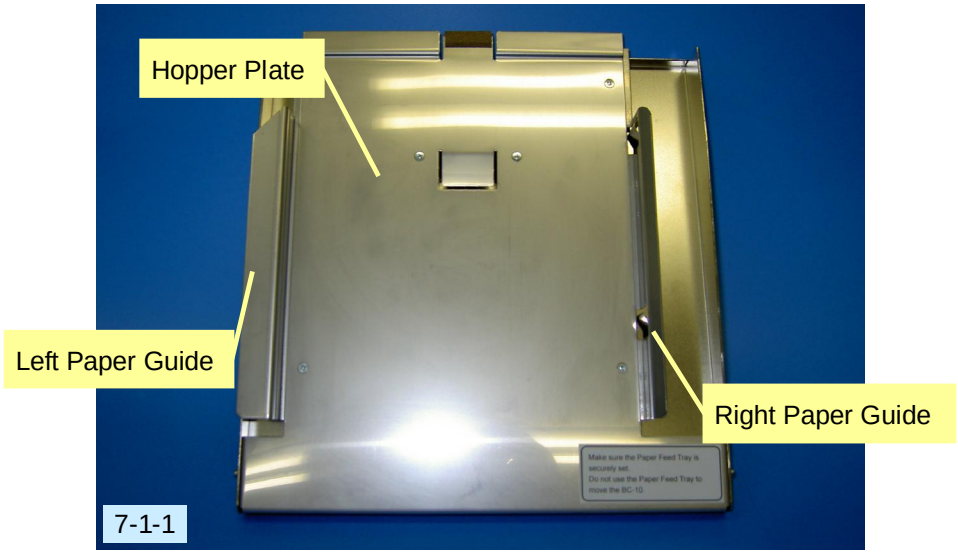
Troubles	Possible Cause	Action
	A paper fragment has been caught between a Slitter Disc and a spring inside the Slitter Unit. (When the short sides of finished cards are not crisp.)	Remove the fragment.
8. The lengths of finished cards are unequal (more than 0.15mm).	The paper curls or waves too much to be conveyed smoothly.	Remove the paper from the Paper Feeder Tray and straighten it.
	The paper has so much friction that it cannot be conveyed properly.	Try some other papers with less friction.
	The paper is so wide as to have too much friction against the Paper Guides.	Use proper papers.
9. Cutting accuracy is good, but the positions of printed images are uneven.	The layout is not good.	Redo the layout.
10. The Display does not operate correctly.	Excessive static electricity is affecting the machine.	Turn off the Power Switch. Wait seven seconds and turn the power back on. Keep the humidity between 50 and 80%. Make sure the machine is grounded.
	The BC-10 is out of order.	Call for service.
11. Finished cards do not accumulate neatly in the Card Stacking Box or cut fragments get scattered in the Trash box.	The BC-10 is not grounded and affected by static electricity.	Make sure the machine is grounded.
	The atmosphere is too dry and static electricity affects.	Check the humidity and try a humidifier if needed.

Troubles	Possible Cause	Action
12. With the cutting mode set to “double cut,” cut fragments go forward and cause fouling.	The atmosphere is too dry and static electricity affects.	Try a humidifier to make the atmosphere more humid than 50%.
	The BC-10 is not grounded and affected by static electricity.	Make sure the machine is grounded.
13. The BC-10 does not respond to command inputs.*	The Onboard Microcomputer has been affected by an electromagnetic noise.	Turn off the Power Switch. Wait seven seconds and turn the power back on. This procedure resets the microcomputer.
14. Finished cards are not rectangles, more like diamonds.	The Paper Feeder Tray is skewed.	Reattach the Paper Feeder Tray properly.
	The Pressure Roller Unit is not set properly.	Make sure the Unit is set neatly in its regular position.
*1, 2, 3, and 13: If all of the items in each section have been checked and the problems are still unresolved, the BC-10 needs to be repaired. If problems continue after checking all the items above, call for service.		

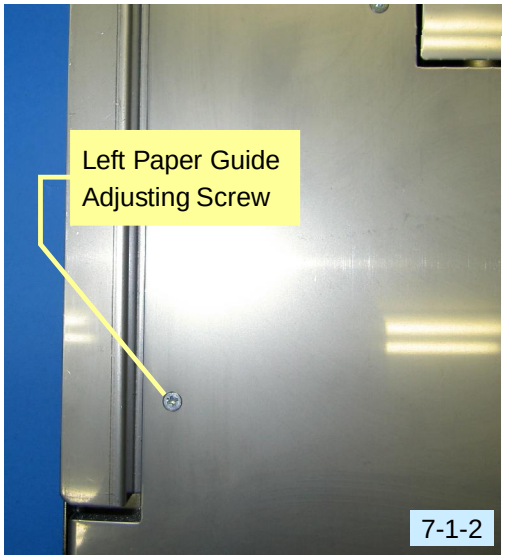
7. ADJUSTMENT

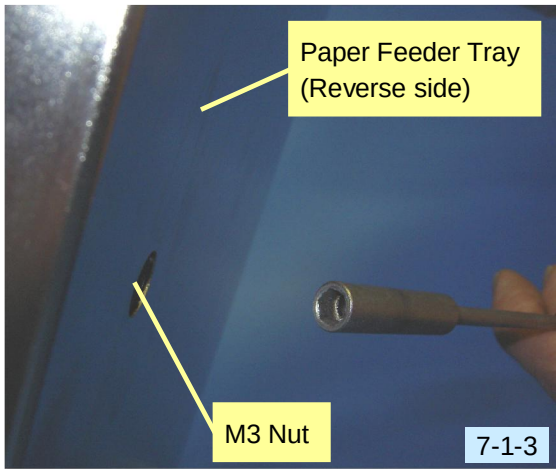
7-1. To fix the paper skews:

1. Make sure the Paper Feeder Tray is set properly.

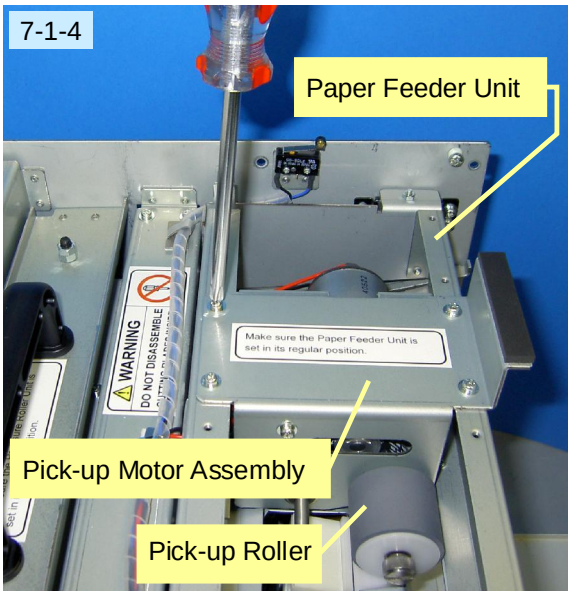


2. While holding the M3 Nut under the Paper Feeder Tray, loosen the Left Paper Guide Adjusting Screw.
3. Move the Left Paper Guide slightly to fix the paper skew.
4. Tighten the Screw.





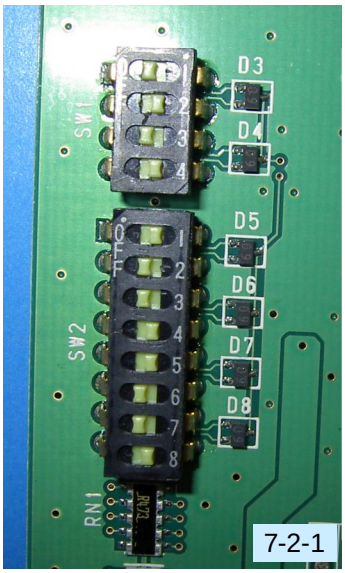
If the above procedure does not work, loosen the Setscrews of the Pick-up Motor Assembly and adjust the alignment.



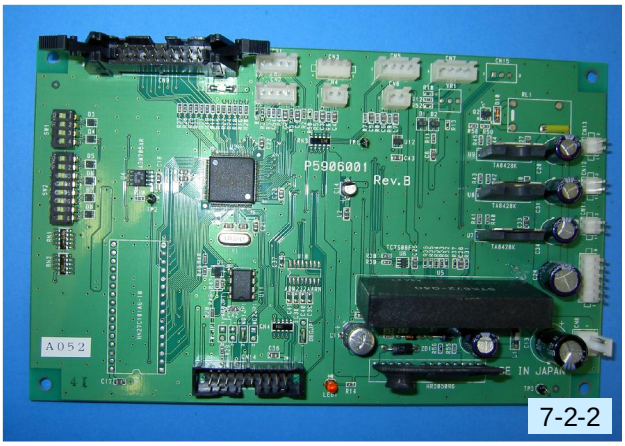
7-2. Adjustment with DIP Switches

There are two sets of DIP Switches in the left of the Mainboard.

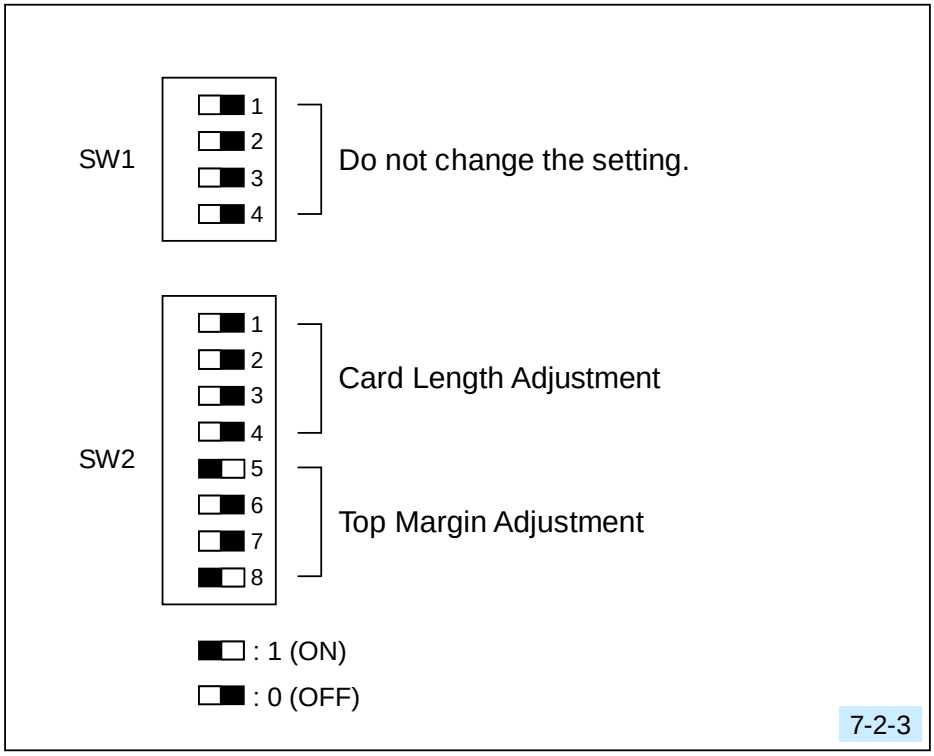
Note: Do not change the setting of the SW1 DIP Switches. If you change the setting, the machine will not work properly. All the SW1 DIP Switches must be set to “0 (or Off).”



7-2-1



7-2-2



7-2-3

7-2-1. To adjust the Top Margin:

You can adjust the Top Margin with the SW2 DIP Switches. You have 16 steps (1 step: 0.125mm) by setting four toggle switches (#5, #6, #7 and #8). See the table 7-A.
Note: Changes of the DIP Switches affect the Top Margins of all Cutting Modes.

Table 7-A: Switch settings for Top Margin Adjustment (0=Off, 1=On)

#5	#6	#7	#8	Adjusting amount (mm)
0	0	0	0	-1.000
1	0	0	0	-0.875
0	1	0	0	-0.750
1	1	0	0	-0.625
0	0	1	0	-0.500
1	0	1	0	-0.375
0	1	1	0	-0.250
1	1	1	0	-0.125
0	0	0	1	±0.000
1	0	0	1	+0.125
0	1	0	1	+0.250
1	1	0	1	+0.375
0	0	1	1	+0.500
1	0	1	1	+0.625
0	1	1	1	+0.750
1	1	1	1	+0.875

*The other way of adjusting Top Margin:

1. Press the Adjust Top margin button on the Operation Panel and the “Top margin” LED will turn on and the Top Margin value used in the last job will appear.
2. When you browse Cutting Modes, the standard Top Margin length for each Cutting Mode appears.
3. Press p or q to increase/decrease the Top Margin length one step (0.25mm) at a time.
4. Press the Adjust Top margin button to save the value and return to the Counter Display. Refer to the Operation Manual for more details.

7-2-2. To adjust the Card Length:

You can adjust the Card Length with the SW2 DIP Switches. You have 16 steps (1 step: 0.125mm) by setting four toggle switches (#1, #2, #3 and #4). See the table 7-B.
Note: Changes of the DIP Switches affect the Card Lengths of all Cutting Modes.

Table 7-B: Switch settings for Card Length Adjustment (0=Off, 1=On)

#1	#2	#3	#4	Adjusting amount (mm)
0	0	0	0	-1.000
1	0	0	0	-0.875
0	1	0	0	-0.750
1	1	0	0	-0.625
0	0	1	0	-0.500
1	0	1	0	-0.375
0	1	1	0	-0.250
1	1	1	0	-0.125
0	0	0	1	±0.000
1	0	0	1	+0.125
0	1	0	1	+0.250
1	1	0	1	+0.375
0	0	1	1	+0.500
1	0	1	1	+0.625
0	1	1	1	+0.750
1	1	1	1	+0.875